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EXAMINER

TERMANINI, SAMIR

ART UNIT	PAPER NUMBER
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2179

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,473

Applicant(s)

HUNT, SIMON DEREK

Examiner

Samir Termanini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/23/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/11/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The four (4) replacement drawings submitted in response to the *Notice to File Corrected Application Papers* under 37 CFR §1.84 mailed on 1/12/2004 were received on March 11, 2004.

2. The drawings are objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims.

As to **claim 15 and 41**, the drawings fail to explicitly or implicitly illustrate or convey any third category reporting to any second category nodes. It is further noted that applicant teaches the converse: the second reporting to the third (Applicants' specification at lines 9-10, para. [0034], and lines 6-7, para. [0028]). Second category nodes reporting to the third category must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

As to **claims 44-45**, the "constellation" and "constellation of values" specified in **claims 44-45** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

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views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

4. Drawings appear within the specification. Attention is directed to 37 CFR §1.58, which states in part: "The specification, including the claims, may contain chemical and mathematical formulae, but shall not contain drawings or flow diagrams." (Emphasis added). Appropriate correction is required.

5. Page 7, Paragraph [0027], of applicant's specification contains a typographical error: element 218 refers to two different things (i.e. in one instance a node belonging to a first category and in the same instance a second category). Element 218 refers to a node that belongs to a second category and it appears applicant intended the last sentence of Paragraph [0027] to read, "The second-category nodes 218 and 220 report to the first category-node 216." Appropriate correction is required.

Claim Objections

6. Claims 3, 19, and 34 are objected to because they end with semicolons instead of periods. Each claim should begin with a capital letter and end with a period. *See* MPEP 608.01(i). Appropriate correction is required.

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7. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 4, 13, 20, and 40**, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to **claims 4 and 20**, the limitation: "storage-domain component includes one of the following:" is indefinite because the list of elements that follow it are concatenated with a conjunctive "and." Hence, the boundaries of the subject matter for which protection is sought have not been particularly pointed out because is not clear if parameter must: have one of each of the elements; one and only one of the elements; or if more than one of the elements are permitted. Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). Additionally, applicant uses the open-ended transitional "including" where a closed ended transitional is required for a proper

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Markush group. It is improper to use the term "comprising" instead of "consisting of." Ex parte Dotter, 12 USPQ 382 (Bd. App. 1931). *See also* 2173.05(h).

As to **claims 13 and 40**, the limitation: "storage-domain component is one of the following" must be recited alternatively. Because they are concatenated with a conjunctive "and," the claim is indefinite as they do not set forth the boundaries of the subject matter for which protection is sought. When elements recited in a claim are so related as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, then "wherein R is A, B, C or D" shall also be considered proper. *See* MPEP 2173.05(h).

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. **Claims 1-11** are rejected under 35 U.S.C. 101 because they are directed to non-statutory subject matter. More specifically, the claims are directed to computer programs that are not limited to being embodied on a tangible computer-readable medium. Paragraph [0060] on page 17 of applicants' specification leaves open a reasonable possibility that the claims may be directed to the computer program *per se* because the broadest reasonable interpretation of the claim would be that it includes only the program *per se* (code alone) or the program on an intangible medium. Note that amending the claims by inserting language stating that the computer-related method is encoded on a computer-readable medium, may overcome this rejection. *See also* MPEP 2106.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. **Claims 1-44** are rejected under 35 U.S.C. 102(e) as being anticipated by *Benhase et al.* (Pub No. 2004/0243616 A1).

As to independent **claim 1**, *Benhase et al.* teach a method of generating a graphical portion of a graphical user interface (user interface, para [0006]) comprising: illustrating, in the same graphical portion (interface display 400, para. [0037]), a tree hierarchy (tree, para. [0037]) and a table of values (table with...information associated with nodes, para. [0037]); including, in the tree hierarchy, one or more nodes belonging to a first node-category (Logical Subsystem LLS, para. [0037]) and one or more nodes belonging to a second node-category and corresponding to a group of elements (e.g. vol 1-4, Fig 4; *see also* N4-N7 and N9-N10, para. [0037]); adaptively arranging the table, in response to a selection of one of the first-category nodes via the GUI (user selecting node with e.g. a mouse and information being presented about selected node, para. [0038]), to include one or more rows that present information about the one or more second-category nodes (e.g. resources identifier, para. [0038]; *see also* 434 in Fig. 4), respectively, and that report to the selected one of the first-category nodes, and one or more columns

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representing a parameter of one or more the second-category nodes, respectively (*see* e.g. Fig. 3 and 4); and showing, in the rows, sums of individual values exhibited by elements of the group, respectively (e.g. column 434 provides a size of the child resources, para. [0038]).

As to dependent **claim 2**, *Benhase et al.* further teach including, in the tree hierarchy, at least one node belonging to a third node-category (e.g. Node N1 in Fig.3); wherein the one or more first-category nodes (e.g. Node N2, Fig.3) report to the at-least-one third-category node, respectively (also see Fig.4 where LSS, A, B, and C report to Server A).

As to dependent **claim 3**, *Benhase et al.* further teach the elements in the tree hierarchy to represent a component in a storage domain (i.e. storage resources, [0036]).

As to dependent **claim 4**, *Benhase et al.* further teach that the parameter of the storage-domain component includes one of the following: a number of LUNs to which the element has access (logical unites 434, Fig.4); an amount of storage space made available to the element (logical unites 434, Fig.4); and a cost per unit time of an amount of storage made available to the element (copy progress 439, Fig.4).

As to dependent **claim 5**, *Benhase et al.* further teach a column representing the storage-space-amount parameter (see size column 434, Fig. 4). They also teach that the row is associated via the second-category node (i.e. vols 1-4, Fig 4.) with the respective group of elements shows in a cell intersecting the storage-space-amount-parameter column a sum of the storage space represented by the elements of the group (Fig.4 shows the volume rows all intersect with the size column).

As to dependent **claim 6**, *Benhase et al.* further teach splitting the graphical portion into a first pane (first display region 410, para. [0037]) and a second pane (second display region 420, para. [0037]); the first pane containing the tree hierarchy (including tree, para. [0037]); and the second pane containing the table (table with rows, para. [0037]).

As to dependent **claim 7**, *Benhase et al.* further teach the first type of row (e.g. rows with the resource identifier 432, Fig.4) and the second type of row that presents information about a selected first-category node (Additional rows identifying the parent nodes of selected resources [0040], see also Fig. 4).

As to dependent **claim 8**, *Benhase et al.* further teach the second-type row with a cell corresponding to each of the columns respectively (see intersections delineated by the column lines intersection through the rows, Fig. 4) and show cells of the second-type row with to be a sum of the values that correspond to cells of the first-type rows (See total size column 434, Fig. 4).

As to dependent **claim 9**, *Benhase et al.* further teach illustrating a title for the table, the title being an at least partial pathname to the selected one of the first-category nodes (node indicia, lines 12-14, [0040]), the pathname including an identifier of a third level node (system element 452 [0040], see also Fig 4.) to which the selected one of the first-category nodes reports (See Fig 4. where first category nodes report to third level nodes, i.e. LLS a,b, and c report to server A).

As to dependent **claim 10**, *Benhase et al.* further teach that the tree hierarchy concerns various-type components of a storage domain (Storage: Lines 11-15, para [0036]), the third-category node represents the total instances of a particular type among the storage-domain components (particular type, [0037]), and

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each of the second-category nodes represents a subset of the total instances of the particular type of storage-domain component (e.g. volumes, lines 12-13, [0037]).

As to dependent **claim 11**, *Benhase et al.* further teach that the table is formed of multiple tabbed sub-tables (header or title of each column is a tab, that can be clicked to present a new resorted table, para. [0042]).

As to independent **claim 12**, *Benhase et al.* teach a method of generating a graphical portion of a graphical user interface (user interface, para [0006]), the graphical portion concerning various components of a storage domain, the method comprising: illustrating a tree hierarchy (tree, para. [0037]); including, in the tree hierarchy, a node belonging to a first node-category (Logical Subsystem LLS, para. [0037]), the first-category node representing the total instances of a particular type among the storage-domain components (i.e. storage resources, [0036]), and including, in the tree hierarchy, one or more subset nodes belonging to a second node-category reporting to the first-category node (e.g. vol 1-4, Fig 4; *see also* N4-N7 and N9-N10, para. [0037]), each second-category subset node representing a subset of the total instances of the particular type of storage-domain component (*see* Fig. 4).

As to dependent **claim 13**, *Benhase et al.* further teach that the type of storage-domain component (i.e. storage resources, [0036]), is one of the following: a storage area network (Fig.4); an interconnect device (SCSI para. [0028]; *see also* [0037]); a storage device (i.e. storage resources, [0036]), a host (HA's, para. [0028]).

Claim 14, fails to further limit claim 12 and is (in addition to the reasons set forth above) rejected in view of *Benhase et al.* for by the same reasons set forth in regard to claim 12.

As to dependent **claim 16**, *Benhase et al.* further teach illustrating, in the tree hierarchy, a node a third node-category corresponding to the storage-domain as a whole (ln 12-13, para. [0037]), each first-category node reporting to the third-category node (Logical Subsystem, para. [0037] reporting to Server as shown in e.g. Fig. 3-4).

As to independent **claim 17**, this claim is a product-by-process claim where the applicant intends for the product itself to depend on the process for making it. Additionally, this claim is directed toward a product defined by a process identically claimed in claim 1. Thus, this claim is analyzed as previously discussed with respect to claim 1 below.

As to dependent **claims 18-27**, these claims are product-by-process claims where the applicant intends for the product itself to depend on the process for making it. Additionally, these claim is directed toward a product defined by a processes identically claimed in claims 2-11, respectively. Thus, these claims are analyzed as previously discussed with respect to claims 2-11 above.

As to independent **claim 28**, this claim is a product-by-process claim where the applicant intends for the product itself to depend on the process for making it. Additionally, this claim is directed toward a product defined by a process identically claimed in claim 1. Thus, this claim is analyzed as previously discussed with respect to claim 12 below.

As to dependent **claims 29-32**, these claims are product-by-process claims where the applicant intends for the product itself to depend on the process for making it. Additionally, these claim is directed toward a product defined by a

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processes identically claimed in claims 13-16, respectively. Thus, these claims are analyzed as previously discussed with respect to claims 13-16 above.

As to independent **claim 33**, *Benhase et al.* teach an apparatus for managing components of a system, the apparatus comprising: a host operatively connected to the components of system (elements 120 and 130, Fig. 1); and manager means for running on the host and for managing the components of the system in part by producing a graphical user interface (manager, para [0025]); and generation means for generating a graphical portion of the GUI (Fig. 1), the generation means being operable to portray, in the same graphical portion, a tree hierarchy (Fig. 4-8) and a table of values; portray, in the tree hierarchy, one or more nodes belonging to a first node-category (element 412, Fig. 4) and one or more nodes belonging to a second node-category (i.e. vols 1-4, Fig 4.) and corresponding to a group of elements (Fig. 4); adaptively dispose the table, in response to a selection of one of the first-category nodes via the GUI, to include one or more rows that present information about the one or more second-category nodes, (user selecting node with e.g. a mouse and information being presented about selected node, para. [0038]), and that report to the selected one of the first-category nodes, and one or more columns representing a parameter of one or more the second-category nodes, respectively; and portray, in the rows, sums (e.g. column 434 provides a size of the child resources, para. [0038]). of individual values exhibited by elements of the group, respectively (*see* e.g. Fig. 3 and 4).

As to dependent **claims 34-36**, *Benhase et al.* further teach the system and elements within to be storage domain (i.e. storage resources, [0036]) and that a parameter of the storage-domain component includes one of the following: a number

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of LUNs to which the element has access (logical unites 434, Fig.4); an amount of storage space made available or space amount (logical units 434, Fig.4); and a cost per unit time of an amount of storage made available to the element (copy progress 439, Fig.4) and a row associated via the second-category node with the respective group of elements shows in a cell intersecting the storage-space-amount-parameter column a sum of the storage space represented by the elements of the group (Fig.4 shows the volume rows all intersect with the size column).

As to dependent **claim 37-38**, *Benhase et al.* further teach that the rows of the table are a first type of row (e.g. rows with the resource identifier 432, Fig.4); and the generation means is further operable to dispose, in the table, a second type of row that presents information about the selected one of the first-category nodes (Additional rows identifying the parent nodes of selected resources [0040], see also Fig. 4). and that the second-type row has a cell corresponding to each of the one or more columns and for each of the one-or-more cells of the second-type row, a sum of the values in the corresponding cells of the first-type rows (e.g. vol 1-4, Fig 4; *see also* N4-N7 and N9-N10, para. [0037]).

As to independent **claim 39**, *Benhase et al.* teach an apparatus for managing components of a storage domain, the apparatus comprising: a host operatively connected to the components of the storage domain (elements 120 and 130, Fig. 1); and storage area manager means for running on the host and for managing the components of the storage domain (manager, para [0025]); in part by producing a graphical user interface (Fig. 4) and generation means for generating a graphical portion of the GUI, the graphical portion concerning various components of a storage domain (Fig. 4-8), the generation means being operable to portray a tree hierarchy

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(hierarchy, Fig. 4-8); portray, in the tree hierarchy, a node belonging to a first node-category, the first-category node representing the total instances of a particular type among the storage-domain components (element 412, Fig. 4), and portray, in the tree hierarchy, one or more subset nodes belonging to a second node-category reporting to the first-category node, each second-category subset node representing a subset of the total instances of the particular type of storage-domain component sums (e.g. column 434 provides a size of the child resources, para. [0038]).

As to dependent **claim 40**, *Benhase et al.* further teach that the type of storage-domain component (i.e. storage resources, [0036]), is one of the following: a storage area network (Fig.4); an interconnect device (SCSI para. [0028]; see also [0037]); a storage device (i.e. storage resources, [0036]), a host (HA's, para. [0028]).

As to dependent **claim 42**, *Benhase et al.* further teach that the generation means is further operable to dispose one or more instance nodes belonging to a third node-category reporting to the second-category subset nodes respectively (see Fig.4 where LSS, A, B, and C report to Server A).

As to dependent **claim 43**, *Benhase et al.* further teach that the generation means is further operable to dispose a node a third node-category corresponding to the storage-domain as a whole, each first-category node reporting to the third-category node(Logical Subsystem, para. [0037] reporting to Server as shown in e.g. Fig. 3-4).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: PG PUB 2005/0114790, PG PUB 2004/0085347, Pat No. 5,832, 496.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir Termanini whose telephone number is (571) 270-1047. The examiner can normally be reached on 9AM - 4PM, Monday-Friday (alternating Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ST/

Samir Termanini
Patent Examiner
Art Unit 2179



SHUWANG LIU
SUPERVISORY PATENT EXAMINER